

REMARKS

Claims 1, 4-22, and 24-44 are in the application, with claims 1, 22, 25, 26, 27, 32, 40 and 43 being the independent claims. Claims 1, 25, 27, 32, and 35 are amended, and claims 37-44 are added. Claims 2, 3 and 23 are cancelled. Based on the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding rejections and that they be withdrawn.

Interview

1. The Applicants thank the Examiner for the interview on February 22, 2007. During the interview claims 1, 22, and 26 and the asserted Brill patent were discussed.

Anticipation Rejection Based on Brill

2. On pages 2-6 in section 3, the Office Action rejected claims 1, 4-22, and 24-36 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,816,184 to Brill et al. (hereinafter Brill). Applicant respectfully traverses the rejection.

Claim 1, as amended, recites a computer-readable medium comprising software for a video surveillance system, comprising code segments for operating the video surveillance system based on video primitives, wherein the code segments for operating the video surveillance system comprise: code segments for identifying one or more user-defined event discriminators; code segments for **extracting video primitives** from a video; and code segments for **extracting event occurrences from the video primitives** using at least one of the one or more user-defined event discriminator, **wherein the code segments for extracting event occurrences are different from the code segments for extracting video primitives; wherein each video primitive is an**

observable attribute of an object viewed in the video; wherein the video primitives are at least one of the following: a size; a shape; a color; a texture; a velocity; a speed; an internal motion; a feature of a salient motion; or a feature of a scene change. Brill fails to teach claim 1 for several reasons.

First, Brill fails to teach extracting video primitives, wherein each video primitive is an observable attribute of an object viewed in the video. See, e.g., Specification, paragraph [80]. As defined in the specification, an “object” refers to an item of interest in a video. See, e.g., Specification, paragraph [45]. Examples of an object include a person, a vehicle, an animal, and a physical subject. See, e.g., Specification, paragraph [45]. Video primitives may be very useful in a video surveillance system. For example, with video primitives, user-defined event discriminators may be easily defined based on the video primitives, resulting in a flexible video surveillance system that may be used in virtually any scene. In contrast, the system of Brill would need to be entirely re-programmed for each new application.

In rejecting claim 1, the Office Action aligns the recited extracting video primitives with the change regions of Brill (e.g., person 106 and object 107 in Figure 7 of Brill) and their corresponding bounding boxes (e.g., bounding boxes 111 and 112, respectively, in Figure 7 of Brill) and with the low-level identification analysis of Brill used to identify the change region as a person, a briefcase, a notebook, a box, a computer monitor, or an unknown. Brill, column 4, line 51, to column 5, line 14. However, the identified change region and its bounding box of Brill are not video primitives as neither of these are an observable attribute of an object viewed in the video feed.

Instead, the identified change region and its bounding box of Brill may arguably be aligned with the classified objects determined in block 56 of Figure 5 of the specification. In

block 56 of the specification, each object is classified (e.g., as a person, a dog, a vehicle, a police car, an individual person, or a specific type of object), and any technique for classifying objects can be used for this block. See, e.g., Specification, paragraphs [81] and [115]. The identifying of a change region and its bounding box as taught by Brill and relied upon by the Office Action may arguably be aligned with classifying objects in block 56 of the specification and **not** with extracting video primitives. Such an identification of a change region as disclosed by Brill is unrelated to extracting video primitives. As such, Brill fails to teach extracting video primitives, wherein each video primitive is an observable attribute of an object viewed in the video.

Second, Brill fails to teach the video primitives are at least one of the following: a size, a shape, a color, a texture, a velocity, a speed, an internal motion, a feature of a salient motion, or a feature of a scene change. See, e.g., Specification, paragraph [80]. As noted above, in rejecting claim 1, the Office Action aligns the recited extracting video primitives with the change regions of Brill (e.g., person 106 and object 107 in Figure 7 of Brill) and their corresponding bounding boxes (e.g., bounding boxes 111 and 112, respectively, in Figure 7 of Brill) and with the low-level identification analysis of Brill used to identify the change region as a person, a briefcase, a notebook, a box, a computer monitor, or an unknown. Brill, column 4, line 51, to column 5, line 14. However, the identified change region and its bounding box of Brill are **neither** a size, a shape, a color, a texture, a velocity, a speed, an internal motion, a feature of a salient motion, **nor** a feature of a scene change. Hence, Brill fails to teach the video primitives are at least one of the following: a size, a shape, a color, a texture, a velocity, a speed, an internal motion, a feature of a salient motion, or a feature of a scene change.

Third, Brill fails to teach **event occurrences**. As discussed in the specification, the event discriminators are used to filter the video primitives to determine if any event occurrences

occurred. See, e.g., Specification, paragraph [118]. As an example discussed in the specification, an event discriminator can be looking for a “wrong way” event as defined by a person traveling the “wrong way” into an area between 9:00 a.m. and 5:00 p.m. The exemplary event discriminator then checks all video primitives being generated and determines if any video primitives exist which have the following properties: a timestamp between 9:00 a.m. and 5:00 p.m., a classification of “person” or “group of people”, a position inside the area, and a “wrong” direction of motion. If a video primitive matches the properties of the event discriminator, an event occurrence occurred. See, e.g., Specification, paragraph [118].

In rejecting claim 1, the Office Action aligns the recited event occurrences with a person 106 entering the mapped region 86 and the corresponding bounding box 111 for the person 106 in the image 101 in Figure 7 of Brill. As discussed above, however, the bounding box 111 is a result of the low-level image subtraction technique, which results in a bounding box around the detected change region. Brill, Figures 2A-2H, column 2, line 64, to column 4, line 4. This low-level image processing algorithm and bounding box generation taught by Brill and relied upon by the Office Action may arguably be aligned with a background subtraction process that might be used to extract objects in block 52 in Figure 5 of the specification and the blob generation in block 53 in Figure 5 of the specification. In block 52 of the specification, objects are detected via change, and any change detection algorithm for detecting changes from a background model can be used for this block. See, e.g., Specification, paragraph [108]. In block 53 of the specification, blobs, which are any object in a frame, are generated. See, e.g., Specification, paragraph [111]. The low-level image processing algorithm and bounding box generation taught by Brill and relied upon by the Office Action may be aligned with detecting objects via change in block 52 and blob generation in block 53, respectively, of the specification and not with event

occurrences. Such a background subtraction and bounding box process as taught by Brill is unrelated to event occurrences. As such, Brill fails to teach event occurrences.

Fourth, Brill fails to teach **extracting event occurrences from the video primitives, wherein the code segments for extracting event occurrences are different from the code segments for extracting video primitives**; using at least one of the one or more event discriminators. In rejecting claim 1, the Office Action aligns the recited **extracting event occurrences from the video primitives** using at least one of the one or more event discriminators with the dot 118 in the map 85 of Figure 7 and with checking for certain events using the event selection box in Figure 8 of Brill (citing column 7, line 50, to column 8, line 17; and column 8, lines 42-67). The system 10 of Brill, however, fails to use anything like a video primitive from which to extract even occurrences. Nowhere does Brill describe separately extracting the primitives and thereafter extracting the event occurrences from the extracted primitives. Instead, the checking for certain events in Figure 8 of Brill reviews the events extracted during low-level motion analysis (Brill, Figure 3, column 4, lines 15-50), the objects identified from the change regions (Brill, column 4, line 51, to column 5, line 14), the dots (e.g., dot 118) in the map 85 as compared to the user-defined regions in the map 85 (Brill, column 8, lines 18-34), the time the dot (e.g., dot 118) remains in the user-defined region in the map 85 (Brill, column 8, lines 54-60), and an action to be initiated (Brill, column 8, lines 60-67). The checking for certain events of Brill does **not** extract event occurrences from video primitives, which are, as discussed above, **observable attributes of an object** viewed in the video feed. The checking for certain events of Brill is unrelated to extracting event occurrences from video primitives.

Perhaps, the Office Action is confused by the use of the term “event” in Brill and the use of the term “event occurrence” in the specification. Although a similar term is used, two different concepts are being referenced. In Brill, the term “event” refers to an interaction of an object with the scene (e.g., enter, exit, loiter, deposit, remove, rest, move, or lightsout event). Brill, column 8, lines 42-45; Figure 3, column 4, lines 15-50. In contrast, as discussed above, in the specification, the term “event occurrence” refers to what occurs if a video primitive matches the properties of the event discriminator. See, e.g., Specification, paragraph [118]. Instead, the “event” of Brill may arguably be aligned with an interaction identified in block 35 of Figure 3 of the specification (e.g., an object appears, or a person appears). See, e.g., Specification, paragraphs [97]-[98].

Therefore, based on the above arguments, Brill fails to teach claim 1.

Claims 4-11, 13-21, and 29-31 depend variously from claim 1, and are allowable as being dependent from an allowable claim.

Moreover, for claim 20, Brill fails to teach that the video primitives are retrieved from an **archive of video primitives**. In rejecting claim 20, the Office Action aligns the recited retrieving video primitives from an **archive** of video primitives with the item identified by reference numeral 101 in Figure 7. However, the reference numeral 101 in Figure 7 is for **the image 101**, which is for the **current** image in the video from the camera 12. Brill, column 7, lines 41-51. Moreover, as defined in the specification, a “video primitive” refers to **an observable attribute of an object** viewed in a video feed. See, e.g., Specification, paragraph [80]. As such, receiving a current image from a camera as in Brill is **not** the same as retrieving video primitives from an **archive of video primitives**. Thus, Brill fails to teach that the video primitives are retrieved from an archive of video primitives.

Claim 22 recites similar features as claim 1 and is allowable for at least similar reasons as discussed above with respect to claim 1.

Moreover, for claim 22, Brill fails to teach **accessing archived video primitives**. In rejecting claim 22, the Office Action fails to discuss which portion of Brill teaches accessing **archived** video primitives. In fact, nowhere does Brill discuss accessing video primitives that have been archived. With archived video primitives, for example, a video may be analyzed with new event-discriminators in a forensic analysis application without needing to process each frame of the video again. Instead of processing each frame of the video again, the video is analyzed again based on the archived video primitives for the video. Moreover, the video may continue to re-analyzed without processing any frames of the video again, but by running the video primitives through new event-discriminators each time. With video primitives, a highly flexible video surveillance system may be obtained.

Claim 24 depends from claim 22, and is allowable as being dependent from an allowable claim.

Claim 25 recites similar features as claim 1 and is allowable for at least similar reasons as discussed above with respect to claim 1.

Claim 26 recites similar features as claim 1 and is allowable for at least similar reasons as discussed above with respect to claim 1.

Moreover, claim 26 is allowable for the additional reason discussed above for claim 22.

Claim 27 recites similar features as claim 1 and is allowable for at least similar reasons as discussed above with respect to claim 1.

Claim 28 depends from claim 27, and is allowable as being dependent from an allowable claim.

Claim 32 recites similar features as claim 1 and is allowable for at least similar reasons as discussed above with respect to claim 1.

Claims 33-36 depend from claim 32, and are allowable as being dependent from an allowable claim.

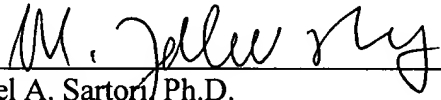
CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that all presently outstanding rejections be reconsidered and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Response is respectfully requested.

Respectfully submitted,

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Michael A. Sartori, Ph.D.
Registration No.: 41,289
Marina V. Zalevsky
Registration No.: 53,825
VENABLE LLP
P.O. Box 34385
Washington, D.C. 20043-9998
Telephone: (202) 344-4000
Telefax: (202) 344-8300

MAS/ab
DC2-821535